

**TRENTON
SYSTEMS**
Rugged Computers

**HDB8237
Backplane**

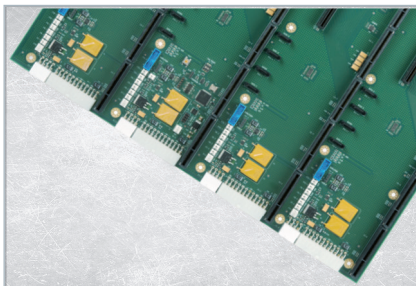
HDEC SERIES LARGE FORMAT BACKPLANE

Host Four Separate Processor Boards In A 5U Chassis

Enhance System Design Flexibility

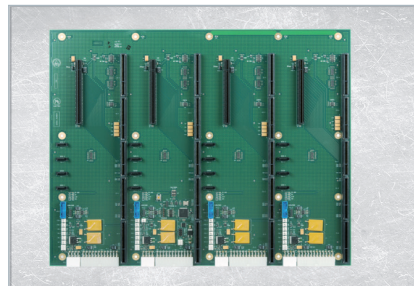
HDEC Series large format backplane supports four separate dual-processor HDEC Series SHB and one x16 PCIe gen 3 slot per segment. This is perfect for applications where four separate dual Xeon processors (8 CPUs total) are needed in a 5U rackspace. All card slots are designed for the Gen3 PCIe electrical interface and are equipped with x16 PCIe mechanical connectors. All PCIe slots are directly connected to the single board computer

PRODUCT DETAILS



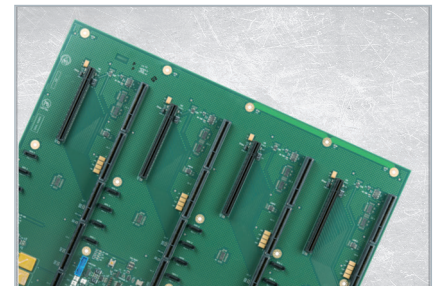
I/O CONNECTIONS

4-SATA 600, 2-USB3, 4-USB2, 1-serial port, and 4 fan headers with fan speed monitoring per segment.



PCI EXPRESS 3.0

PCIe 3.0 provided by the HDEC Series system host board.



OPTION CARD SLOTS

The HDB8237 backplane has one x16 option card slot per segment



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Model Number

HDB8237

Form Factor

HDEC Series large format backplane has four independent computing segments. Each backplane segment supports a dual-processor HDEC Series SHB and a x16 PCI Express option card. A cluster computing system built with the HDB8237 can support up to four independent SHB and PCI Express cards. All card slots are designed for the Gen3 PCIe electrical interface and are equipped with x16 PCIe mechanical connectors.

Mechanical

The nominal backplane thickness is 0.080"; however, the backplane mounting holes are recessed 0.018" on the bottom to provide an effective PCB thickness of 0.062" for use in the chassis design process.

Size

16.4"(417mm) x 12.9"(328mm) - large format

Configuration

Four segment backplane with one x16 PCI Express card slot, and one HDEC Series system host board slot in each backplane segment.

Each backplane segment's PCIe slot is driven with a native PCIe 3.0 link direct from the processors on a compatible HDEC Series system host board; such as Trenton's HEP8225, plugged into the segment's SHB slot.

Card Slots

4 – x16 PCI Express 3.0/2.0/1.1 electrical / x16 mech. connectors (one per backplane segment)

Connectors

The table below lists the device I/O and system status connections available within each backplane segment when using a Trenton HDEC Series system host board like the HEP8225.

- | | |
|---|--|
| • 4 -SATA/600 system headers | • 2 – USB3 interface system header connections |
| • 1 – System fan header | • 4 – ACPI control header (PSON, PWRBTN, RESET, PWRGD) |
| • 1 – Clear CMOS header | • 1 – I2C header allows access to all four segments |
| • 1 – Alarm status headers for the FAN signals (backplane segment 2 location) | |

Agency Approvals & Compliance

Designed for UL60950 and CAN/CSA C22.2 No.60950-00, EN55022:1998 Class B, EN61000-4-2:1995, EN61000-4-3:1997, EN61000-4-4:1995, EN61000-4-5:1995, EN61000-4-6:1996, EN61000-4-11:1994

Power Connectors

Each backplane segment contains the following system power supply connections:

- ATX/EPS power source – one right-angle or vertical 24-position ATX/EPS connector
- +12V AUX power source – one right-angle or vertical 8-position connectors

Indicators

The following LED SHB and system status indicators are available within each backplane segment:

- 1 – System fan present LED
- 1 – System Host Board present LED
- 4 – Incoming system power status LEDs for the 3.3V, 5V, 12V and 5V AUX supply levels

The following LED power indicators are available within each backplane segment:

- +5V, +5V AUX, +12V, and +3.3V system power connection and status

Operating Temperature

0°C to 50°C with standard cooling solution and 350LFM of continuous airflow

Environmental

Airflow: 350LFM continuous airflow

Storage Temp: -40° to 70°C

Humidity: 5% to 90% non-condensing

Trenton's HDB8237 is a lead free, RoHS compliant backplane.



BLOCK DIAGRAM

HDB8228 BACKPLANE

HDB8237 - Layout Diagram

SUGGESTED HDEC Series SHB: DUAL PROCESSOR SHB: HEP8225

ENVIRONMENTAL SPECS.:#

Operating Temp.: 0° C to 60° C
Storage Temp.: -40° C to 70° C
Humidity: 5% to 90%, non-condensing
*Environmental specifications for system host board/single board computers are usually lower than those of the backplane.

The Trenton HDB8237 is a lead-free, RoHS compliant backplane.

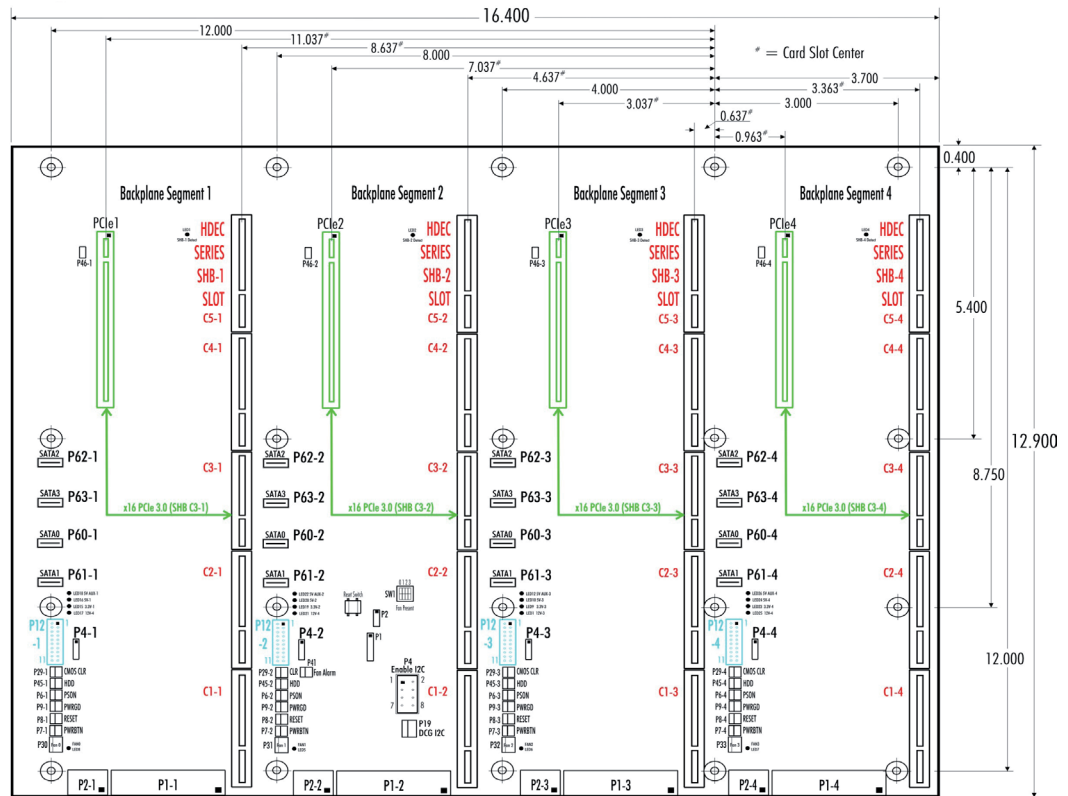
This backplane is designed to meet worldwide EMI emissions requirements, CE conformity and immunity standards. Contact Trenton for the specific standard numbers this product.

The Trenton HDB8237 backplane is designed for UL60950 and CAN/CSA C22.2 No. 60950-00.

ENGINEERING NOTES:

1. The power connectors are shown in the layout drawing represents backplane model 8237-037.
2. Mounting holes: 0.156" diameter
3. Nominal PCB thickness: 0.080"
4. All dimensions are inches.
5. The PCIe 3.0 links, USB, and SATA connectivity is provided by the HEP8225 HDEC Series SHB.
6. PCIe electrical interface key for the option card slots:

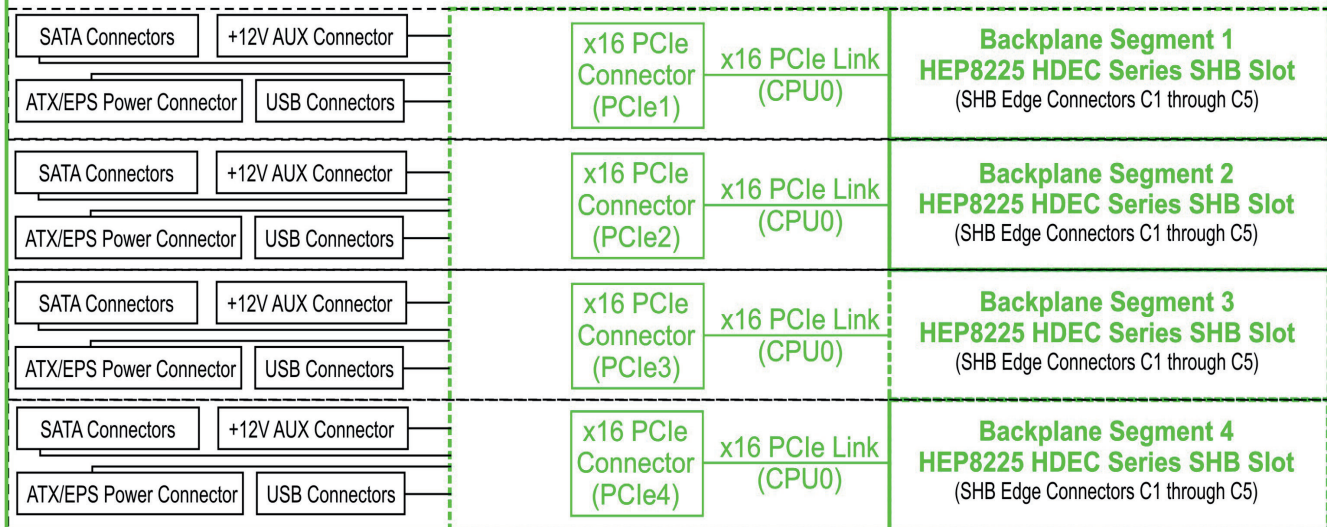
Green = Slot driven with a x16 PCIe 3.0 link



HDEC Series System Host Board

HDB8237 HDEC Series Four-Segment Backplane

Four - System Host Board Slots, Four - x16 PCI Express 3.0 Plug-in Card Slots and Four sets of SATA/600, USB3 and System Power Connectors



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